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10/616,148	07/09/2003	Gennosuke Mutoh	2271/69807	9758

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EXAMINER

BRIER, JEFFERY A

ART UNIT	PAPER NUMBER
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2628

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/616,148

Applicant(s)

MUTOH, GENNOSUKE

Examiner

Jeffery A. Brier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-19, 21-38 and 40-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-19, 21-38, and 40-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 12/27/2006 has been entered.

Response to Arguments

2. Applicant's arguments filed 12/27/2006 concerning the 35 USC 101 rejection have been fully considered but they are not persuasive because the claims do not claim a practical application having a useful, concrete, and tangible result. The claims claim all substantial applications of the mathematical algorithm which performs the claimed process, thus, invoking preemption of the use of the mathematical algorithm. The claimed "image" is a very broad term that covers all substantial applications of the mathematical algorithm which performs the claimed process. See MPEP 2106IV.A. at page 2100-9 last two paragraphs on the second column and MPEP 2106.02.
3. Applicant's arguments filed 12/27/2006 concerning the 35 USC 102 rejection have been fully considered but they are not persuasive. At page 18, first full paragraph to the last full paragraph, applicant alleges that Nakami does not teach or suggest a sharing ratio is calculated, a first processing way and a second processing way share processing resources according to the sharing ratio, and the sharing ratio in the processing between first and second processing ways is adjusted. Both claims 4 and 23 do not claim how often the sharing-ratio determining part calculates the sharing ratio, and adjust the sharing ratio in the processing between the first and second processing

ways. Even the following limitation "so that the entire process of a predetermined image size-change processing is completed within a given time duration" does not limit the claim to more adjustments than is performed by Nakami at column 13 lines 8-13 and column 14 lines 40-61. Additionally Nakami in figure 33 steps ST706-ST720 and at column 24 lines 32-52 teaches calculating a sharing ratio for the hybrid bicubic method and the nearest method by the calculation performed at steps ST714 and ST716 which steps would calculate different sharing ratio based upon different resolutions (Steps ST708 and ST710) and different interpolating scale factors obtained in step ST712.

Claim Rejections - 35 USC § 101

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 2-19, 21-38, and 40-57 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are not directed to a useful, concrete, and tangible result and are directed to manipulating abstract ideas. Independent claims 2 and 23 claim an apparatus for and method for changing the size of image data but do not claim in the body a useful, concrete, and tangible result of the sharing-ratio. Applicants define the apparatus as a program at page 21 line 21 to page 22 line 5, page 25 lines 4-19, page 25 line 24 to page 26 line 14, and page 27 lines 17-23 discusses the program being considered to be the apparatus that performs the functions. Thus, the apparatus, method, and computer

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readable medium claims are similar in scope. *State Street Bank & Trust Co. v.*

Signature Financial Group Inc. (CA FC) 47 USPQ2d 1596, 1603 (7/23/1998). *AT&T Corp. v. Excel Communications Inc.* (CA FC) 50 USPQ2d 1447. On page 1603 first paragraph the CAFC wrote in *State Street*:

Under *Benson* , this may have been a sufficient indicium of nonstatutory subject matter. However, after *Diehr* and *Alappat* , the mere fact that a claimed invention involves inputting numbers, calculating numbers, outputting numbers, and storing numbers, in and of itself, would not render it nonstatutory subject matter, unless, of course, its operation does not produce a "useful, concrete and tangible result." *Alappat* , 33 F.3d at 1544, 31 USPQ2d at 1557. 7

On page 1603 paragraph labeled [4] the CAFC wrote:

[4] The question of whether a claim encompasses statutory subject matter should not focus on which of the four categories of subject matter a claim is directed to -- process, machine, manufacture, or composition of matter-- but rather on the essential characteristics of the subject matter, in particular, its practical utility. Section 101 specifies that statutory subject matter must also satisfy the other "conditions and requirements" of Title 35, including novelty, nonobviousness, and adequacy of disclosure and notice. See *In re Warmerdam* , 33 F.3d 1354, 1359, 31 USPQ2d 1754, 1757-58 (Fed. Cir. 1994).

See MPEP 2106IV.A. at page 2100-9 last two paragraphs on the second column and MPEP 2106.02.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 2-19, 21-38, and 40-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakami et al., US Patent No. 6,510,254.

Nakami teaches the sharing-ratio determining part at steps ST206 and ST210, ST306 and ST310, ST506 and ST508, ST606 and ST608, ST714 to ST720 that determines the sharing ratio of the first processing way (hybrid bicubic method) and a second processing way (nearest method). Nakami discusses performing the first processing way for part of the image scaling and performing the second processing way for the remainder of the scaling at column 12 lines 30-39, column 12 line 64 to column 13 line 17, and column 14 lines 40-61.

Figure 21 and the corresponding description, column 14 lines 40-61, teaches using the longer hybrid bicubic method for size changes below a predetermined size change in step ST308 and using both the hybrid bicubic method and the nearest method in step ST 310 in order to perform the scaling within a given time duration.

Additionally Nakami in figure 33 steps ST706-ST720 and at column 24 lines 32-52 teaches calculating a sharing ratio for the hybrid bicubic method and the nearest

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method by the calculation performed at steps ST714 and ST716 which steps would calculate different sharing ratio based upon different resolutions (Steps ST708 and ST710) and different interpolating scale factors obtained in step ST712.

A detailed analysis of the claims follows.

Claim 4:

Nakami teaches an image processing apparatus for changing the size of image data of an original image (*column 1 lines 8-12*), comprising:

a comparison part comparing an image information value which indicates predetermined image information of the original image (at least image size, see dependent claims 5 and 6, or at least color see dependent claims 7 and 8.), with a corresponding predetermined reference value which is previously set for each of the predetermined image information (*steps ST206, ST306, ST506, ST606, and ST706-ST714*); and

a sharing-ratio determining part which, based on a comparison result of said comparison part, determines a sharing ratio in processing for changing the size of the image data between a first processing way and a second processing way different from said first processing way (*steps ST210, ST310, ST508, ST608, and ST714 to ST720*), wherein

said sharing-ratio determining part calculates the sharing ratio (*The sharing ratio is calculated when the at column 13 lines 8-13 and column lines 40-61 hybrid bicubic is performed to the "predetermined integer" and nearest method is performed at*

and after the "predetermined integer", see figure 8 step ST206, figure 21 step ST 306, figure 29 step ST 506, see figure 30 step ST606, see figure 33 steps ST706-ST720, and see column 24 lines 32-52.), and adjusts the sharing ratio in the processing between the first (hybrid bicubic method. See Figure 21.) and second (nearest method. See figure 21.) processing ways so that the entire process of a predetermined image size-change processing is completed within a given time duration, if a processing time for performing the entire processing of the predetermined image size-change processing utilizing the first processing way (hybrid bicubic method takes longer to perform than nearest method) but not the second processing way exceeds the given time duration (Nakami discusses performing the first processing way for part of the image scaling and performing the second processing way for the remainder of the scaling at column 12 lines 30-39, column 12 line 64 to column 13 line 17, and column 14 lines 40-61 in order to perform the processing more quickly which meets the claim limitation of completing the processing within a given time duration.). Applicant's specification gives an example of a the claimed "given time duration" at page 47 lines 2-9 as 800ms but does not limit the processing to that specific example, thus, any time duration that is an acceptable limit meets this claim limitation. Therefore, the decision in Nakami to limit the hybrid bicubic method to a processing limit in order to limit the time needed to change the size of the image meets the claim limitation of "given time duration". Similarly the discussion at column 13 lines 47-52 of maintaining the amount of computation during the interpolation process teaches the claimed "given time duration". Using the hybrid bicubic method takes more time than the nearest method

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which is why Nakami column 12 lines 30-39, column 12 line 64 to column 13 line 17, and column 14 lines 40-61 teaches using both of the hybrid bicubic method and the nearest method.

Claim 2:

Nakami teaches the image processing apparatus as claimed in claim 4, wherein:

said first processing way (*hybrid bicubic method*) comprises a way for achieving a high-order image processing for controlling image degradation. The is a

Claim 3:

Nakami teaches the image processing apparatus as claimed in claim 4, wherein:

said second processing way (*nearest method*) comprises a way of simply changing the number of pixels without changing the respective pixel values.

Claim 5:

Nakami teaches the image processing apparatus as claimed in claim 4, said comparison part compares an image data size-change rate required with a predetermined reference value instead of comparing the predetermined image information value of the original image (*steps ST206, ST306, ST506, ST606, and ST706-ST714 compare the image data size change with a reference size change.*).

Claim 6:

Nakami teaches the image processing apparatus as claimed in claim 4, the information of the image information value and predetermined reference value,

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compared by said comparison part, comprises information concerning the data size of the original image (*The size of the input original image is compared with the post interpolation image size. See steps ST202-ST206, ST302-ST306, ST502-ST506, and ST602-ST606.*).

Claim 7:

Nakami teaches the image processing apparatus as claimed in claim 4, the information of the image information value and predetermined reference value, compared by said comparison part, comprises information concerning the number of colors expressible by each pixel of the original image. Column 1 lines 52-56 discusses that color images require more processing, column 15 lines 21-28 discusses color or monochrome image, column 17 lines 3-23 discusses improving color size changes, and column 27 lines 12-42 especially noting 27-38 which discusses the load scale is not solely determined by the size change but also dependent upon the preciseness needed in the interpolation. As discussed at column 8 line 57 to column 9 line 5 a computer graphics image may only require nearest method while a natural photograph (full color) requires the a cubic method. This teaches to one of ordinary skill in the art to evaluate the color of the image to determine the preciseness needed in order to determine the ratio of sharing the interpolation methods of nearest method and hybrid bicubic method.

Claim 8:

Nakami teaches the image processing apparatus as claimed in claim 4,
wherein:

the information of the image information value and predetermined reference value, compared by said comparison part, comprises information concerning the resolution of the original image (*steps ST206, ST306, ST506, ST606, and ST706-ST714 compare the image data size change with a reference size change.*).

Claim 9:

Nakami teaches the image processing apparatus as claimed in claim 4,
wherein:

the information of the image information value and predetermined reference value, compared by said comparison part, comprises information as to whether or not the original image is a color image or a monochrome image. Column 1 lines 52-56 discusses that color images require more processing, column 15 lines 21-28 discusses color or monochrome image, column 17 lines 3-23 discusses improving color size changes, and column 27 lines 12-42 especially noting 27-38 which discusses the load scale is not solely determined by the size change but also dependent upon the preciseness needed in the interpolation. As discussed at column 8 line 57 to column 9 line 5 a computer graphics image may only require nearest method while a natural photograph (full color) requires the a cubic method. This teaches to one of ordinary skill in the art to evaluate the color of the image to determine the preciseness needed in

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order to determine the ratio of sharing the interpolation methods of nearest method and hybrid bicubic method.

Claim 10:

Nakami teaches the image processing apparatus as claimed in claim 4,
wherein:

the sharing ratio between the first and second processing ways is determined according to a predetermined attribute of the original image (*hybrid bicubic method and nearest method may be selected based upon the image not requiring hybrid bicubic method*).

Claim 11:

Nakami teaches the image processing apparatus as claimed in claim 4,
wherein:

the sharing ratio between the first and second processing ways is determined according to a permissible time duration for completing the entire process of a relevant image size-change processing (*Nakami determines the size change limit based upon a permissible time duration to ensure the processing will be high speed.*).

Claim 12:

Nakami teaches the image processing apparatus as claimed in claim 4,
wherein:

said first processing way comprises a process for preventing a jaggy from becoming conspicuous (*Column 8 line 57 to column 9 line 2, column 12 line 64 to*

column 13 line 17, and column 13 line 63 to column 14 line 7 teaches the hybrid bicubic method prevent a jaggy from being conspicuous.).

Claim 13:

Nakami teaches the image processing apparatus as claimed in claim 10,
wherein:

the predetermined attribute of the original image which is used for determining the sharing ratio by said sharing-ratio determining part comprises the number of used colors in the original image. Column 1 lines 52-56 discusses that color images require more processing, column 15 lines 21-28 discusses color or monochrome image, column 17 lines 3-23 discusses improving color size changes, and column 27 lines 12-42 especially noting 27-38 which discusses the load scale is not solely determined by the size change but also dependent upon the preciseness needed in the interpolation. As discussed at column 8 line 57 to column 9 line 5 a computer graphics image may only require nearest method while a natural photograph (full color) requires the a cubic method. This teaches to one of ordinary skill in the art to evaluate the color of the image to determine the preciseness needed in order to determine the ratio of sharing the interpolation methods of nearest method and hybrid bicubic method.

Claim 14:

Nakami teaches the image processing apparatus as claimed in claim 4,
wherein:

the sharing ratio between the first and second processing ways is determined by said sharing-ratio determining part according to the contents of image processing in the

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entire process of a relevant image size-change processing (*This claim appears to be claiming determining the ratio based upon the type of interpolation being performed which is how steps ST210, ST310, ST508, ST608, and ST714 to ST720 determine the amount of processing to be performed by hybrid bicubic method and the amount of processing to be performed by nearest method*).

Claim 15:

Nakami teaches the image processing apparatus as claimed in claim 4, wherein an application of the first and second processing ways is made in such a manner that one of the first and second processing way is applied, and, after that, the other processing way is applied (*The hybrid bicubic method is applied before nearest method is applied. See steps ST210, ST310, ST508, ST608, and ST718 to ST720*).

Claim 16:

Nakami teaches the image processing apparatus as claimed in claim 15, wherein the application of the first and second processing ways is made in such a manner that one of the first and second processing way, which one requires a longer processing time, is applied first, and, after that, the other processing way is applied (*The hybrid bicubic method which takes longer to process than the nearest method is applied before nearest method is applied. See figure 21.*).

Claim 17:

Nakami teaches the image processing apparatus as claimed in claim 4, wherein an application of the first and second processing ways is made in such a manner that one of a first mode and a second mode is selected according to a comparison result of said comparison part,

wherein said first mode is such that both said first and second processing ways are applied in a combination manner, and said second mode is such that only one of the first and second processing ways is applied (*Steps ST208, ST308, ST510, and ST610 apply only the nearest method. Steps ST210, ST310, ST508, ST608, and ST718 to ST720 apply both the hybrid bicubic method and the nearest method.*).

Claim 18:

Nakami teaches the image processing apparatus as claimed in claim 17, wherein said second mode is such that only one of the first and second processing way, which one requires a longer processing time, is applied (*Figure 21 shows only the longer hybrid bicubic method being applied in the second mode.*).

Claim 19:

Nakami teaches the image processing apparatus as claimed in claim 4, wherein:

said first processing way comprises an image size-change processing for an integer size-change rate (*The hybrid bicubic method is used to change an image's size.*), and said second processing way comprises an image size-change processing (*The nearest method is used to change an image's size.*).

Claims 21-38:

These claims are method claims that correspond to apparatus claims 1-19 and claim the same function that apparatus claims 1-19 claim, thus, claims 20-38 are rejected for the same reasons given above for claims 1-19.

Claims 40-57:

These claims are program for causing a computer to execute each step of the method claims 21-38. Nakami uses a program to cause the computer to execute each method step, thus, Nakami teaches these claims.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffery A Brier whose telephone number is (571) 272-7656. The examiner can normally be reached on M-F from 7:00 to 3:30. If attempts to

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reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi, can be reached at (571) 272-7664. The fax phone Number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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